Claims

1. A method for receiving a multi-carrier signal, comprising the steps of:

detecting a presence of at least one impulse interference within the signal,

identifying one or more samples of said signal where a significant amount of the impulse noise caused by the at least one impulse interference is present,

selecting samples to be blanked,

blanking the selected samples to obtain a signal with blanking, and

determining an estimate of the signal with blanking;

wherein the selected samples comprise the samples identified to have impulse interference present and at least one of the following:

a first predetermined number of samples preceding the identified samples; and

a second predetermined number of samples following the identified samples.

2. A method according to claim 1, wherein the first predetermined number of samples is equal to the second predetermined number.

3. A method according to claim 1, further comprising:

defining a blanking window having a length selected from a plurality of different predetermined lengths and applying the blanking window to the signal so that one or more samples within the blanking window are blanked.

4. A method according to claim 3, wherein the number of blanking windows is one and the predetermined length of the window is equal to or greater than three samples in the time domain.

5. A method according to claim 3, wherein the selected length of the blanking window is the smallest one of the available lengths that is sufficient to encompass the selected samples.

6. A method according to claim 3, wherein the selected blanking window is positioned in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the blanking window.

7. A method according to claim 3, wherein a plurality of instances of the defined blanking window is applied in succession over the samples so that a first blanking window is positioned in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the said first blanking window and at least one second blanking window is positioned so as to include at least one sample immediately succeeding the samples within the first blanking window, wherein all the identified samples are within at least one of the first and second blanking windows.

8. A method according to claim 7, wherein two or more blanking windows are positioned so as to overlap.

9. A method according to claim 3, wherein the blanking window is non-rectangular.

10. A computer program comprising program instructions for causing an apparatus to perform the method of claim 1.

11. An apparatus comprising:

a receiver for receiving a multi-carrier signal; and

a processor;

wherein the processor is configured to:

detect the presence of impulse interference in said signal;

identify one or more samples of said signal where a significant amount of impulse noise is present;

select samples of said signal to be blanked, the selected samples including the identified samples and at least one of a first predetermined number of samples preceding the identified samples; and a second predetermined number of samples following the identified samples;

blank the selected samples to obtain a signal with blanking; and

determine an estimate of the signal with blanking.

12. An apparatus according to claim 11, configured to define a blanking window having a length selected from a plurality of different predetermined lengths and to apply the blanking window to the signal so that one or more samples within the blanking window are blanked.

13. An apparatus according to claim 12, configured to select the smallest one of the predetermined lengths that is sufficient to encompass the selected samples.

14. An apparatus according to claim 12, configured to position the selected blanking window in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the blanking window.

15. An apparatus according to claim 12, configured to apply a plurality of instances of the defined blanking window in succession over the samples so that a first blanking window is positioned in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the said first blanking window and at least one second blanking window is positioned so as to include at least one sample immediately succeeding the samples within the first blanking window, wherein all the identified samples are within at least one of the first and second blanking windows.

16. A communication system comprising a transmitter for transmitting a multi-carrier signal and an apparatus according to claim 10 for receiving said signal.

17. An apparatus for receiving a multi-carrier signal comprising:

detection means for detecting the presence of impulse interference in the signal and identifying one or more samples of said signal where a significant amount of the impulse noise caused by the impulse interference is present;

selection means for selecting samples to be blanked,

blanking means for blanking the selected samples to obtain a signal with blanking; and

estimating means for determining an estimate of the signal with blanking; wherein the selection means are configured to select samples being identified to have impulse interference present and at least one of the following:

a first predetermined number of samples preceding the identified samples; and

a second predetermined number of samples following the identified samples.

18. An apparatus according to claim 17, wherein the blanking means is configured to define a blanking window having a length selected from a plurality of different predetermined lengths and to apply the blanking window to the signal so that one or more samples within the blanking window are blanked.

19. An apparatus according to claim 18, wherein the blanking means is configured to select the smallest one of the predetermined lengths that is sufficient to encompass the selected samples.

20. An apparatus according to claim 18, wherein the blanking means is configured to position the selected blanking window in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the blanking window.

21. An apparatus according to claim 18, wherein the blanking means is configured to apply a plurality of instances of the defined blanking window in succession over the samples so that a first blanking window is positioned in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the said first blanking window and at least one second blanking window is positioned so as to include at least one sample immediately succeeding the samples within the first blanking window, wherein all the identified samples are within at least one of the first and second blanking windows.

22. A communication system comprising a transmitter for transmitting a multi-carrier signal and an apparatus according to claim 17 for receiving said signal.